ENTROPY ECONOMICS
GLOBAL INNOVATION + TECHNOLOGY RESEARCH

BRET SWANSON
PRESIDENT

May 11, 2011

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, D.C. 20554

Re: Docket 11-65

Dear Ms. Dortch:

Please find attached an article that I believe may be useful in your agency's review of the proposed acquisition of T-Mobile USA by AT&T.

In sum, we believe the merger will substantially boost capacity, service quality, coverage, and innovation in the U.S. broadband wireless arena. And it will do so much more quickly than other options. Because America's mobile broadband Internet sector is so dynamic, moreover, with several new entrants just launching 4G services, we think this combination will not have any significant harmful consumer effects. It is likely to benefit consumers.

Please let me know if you have any questions or if I can be of service.

Sincerely,

/s/

Bret T. Swanson

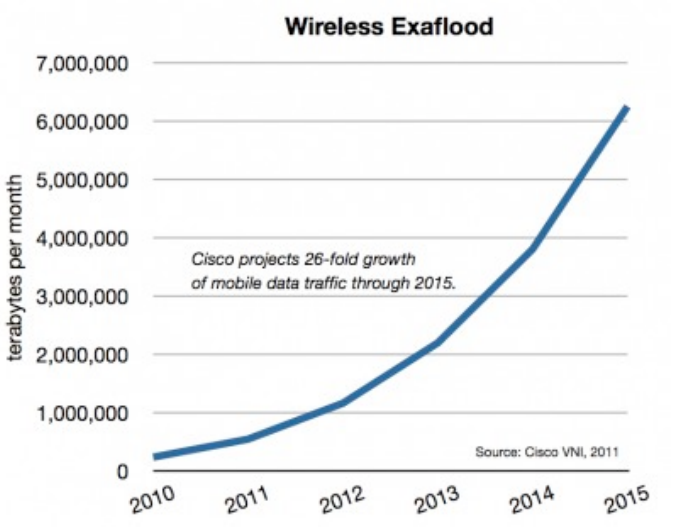
Forbes

March 22, 2011

AT&T's Exaflood Acquisition Good for Mobile Consumers, Internet Growth

AT&T's announced purchase of T-Mobile is an exaflood acquisition — a response to the overwhelming proliferation of mobile computers and multimedia content and thus an onrush of exabytes of network traffic. The iPhone, iPad, and other mobile devices are pushing networks to their limits, and AT&T literally could not build cell sites (and acquire spectrum) fast enough to meet demand for coverage, capacity, and quality. Buying rather than building new capacity improves service *today* (or nearly today) — not years from now. It's a home run for the companies — and for consumers.

We're nearing 300 million mobile subscribers in the U.S., and Strategy Analytics estimates by 2014 we'll add an additional 60 million connected devices like tablets, kiosks, remote sensors, medical monitors, and cars. All this means more connectivity, more of the time, for more people. Mobile data traffic on AT&T's network rocketed 8,000% in the last four years. Remember that just a decade ago there was essentially no wireless data traffic. It was all voice traffic. A few rudimentary text applications existed, but not much more. By year-end 2010, AT&T was carrying around 12 petabytes per month of mobile traffic alone. The company expects another 8 to 10-fold rise over the next five years, when its mobile traffic could reach 150 petabytes per month. (We projected this type of growth in a series of reports and articles over the last decade.)



In 2010, Cisco projected 26-fold growth of mobile data traffic through 2015.

The two companies' networks, spectrum holdings, and businesses are so complementary that AT&T thinks it can achieve $40 billion in cost savings. That's more than the $39-billion deal price. Those huge efficiencies should help keep prices low in a market that already boasts the lowest prices in the world (just $0.04 per voice minute versus, say, $0.16 in Europe).

But those who focus only on the price of existing products (like voice minutes) and traditional metrics of "competition," like how many national service providers there are, will miss the boat. Pushing voice prices down marginally from already low levels is not the paramount objective. Building fourth generation mobile multimedia networks is.

Some wonder whether "consolidation of power could eventually lead to higher prices than consumers would otherwise see." But "otherwise" assumes a future that isn't going to happen. T-Mobile doesn't have the spectrum or financial wherewithal to deploy a full 4G network. So the 4G networks of AT&T, Verizon, and Sprint (in addition to Clearwire and LightSquared) would have been competing against the 3G network of T-Mobile. A 3G network can't compete on price with a 4G network because it can't offer the same product. In many markets, inferior products can act as partial substitutes for more costly superior products. But in the digital world, next gen products are so much better and cheaper than the previous versions that older products quickly get left behind. Could T-Mobile have milked its 3G network serving mostly voice customers at bargain basement prices? Perhaps. But we already have a number of low-cost, bare-bones mobile voice providers.

The merger's boost to cell-site density is hugely important. Yes, we will simultaneously be deploying lots of new Wi-Fi nodes and femtocells (little mobile nodes in offices and homes), which help achieve greater coverage and capacity, but we still need more macrocells. AT&T's acquisition will boost its total number of cell sites by 30%. In major markets like New York, San Francisco, and Chicago, the number of AT&T cell sites will grow by 25%-45%. In many areas, total capacity should double.

It's not easy to build cell sites. You've got to find good locations, get local government approvals, acquire (or lease) the sites, plan the network, build the tower and network base station, connect it to your long-haul network with fiber-optic lines, and of course pay for it. In the last 20 years, the number of U.S. cell sites has grown from 5,000 to more than 250,000, but we still don't have enough.

Spectrum is even more crucial and harder to acquire. Washington is contemplating new sales of up to 500 megahertz (MHz) of underutilized or government-owned spectrum. The goal is to get 300 MHz worth out the door by 2015. But that may be optimistic. Spectrum auctions notoriously lag, and even if the 2015 goal is met, AT&T doesn't have four years to wait. T-Mobile's ownership of a national AWS license at 1.7 GHz, moreover, will allow AT&T to deliver more high-speed data services much sooner.

CEO Randall Stephenson says the T-Mobile purchase will achieve almost immediately a network expansion that would have taken five years through AT&T's existing organic growth plan. Because of the nature of mobile traffic — it's unpredictable, and bandwidth is shared — the combination of the two networks should yield a more-than-linear increase in quality improvements. The increased cell-site density will give traffic planners much more flexibility to deliver high-capacity services than if the two companies operated separately.

The U.S. today has the most competitive mobile market in the world (second, perhaps, only to tiny Hong Kong). So even after the merger, the U.S. will still have a more "competitive" market than most. But "competition" is often not the most — or even a very — important metric in these fast moving markets. In periods of undershoot, where a technology is not good enough to meet demand on quantity or quality, you often need integration to optimize the interfaces and the overall experience, *a la* the hand-in-glove paring of the iPhone's hardware, software, and network. Streaming a video to a tiny piece of plastic in your pocket moving at 60 miles per hour — with thousands of other devices competing for the same bandwidth — is not a commodity service. It's very difficult. It requires millions of things across the network to go just right. These services often take heroic efforts and huge sums of capital just to make the systems work at all.

Over time technologies overshoot, markets modularize, and small price differences matter more. As Harvard Business School's Clayton Christensen taught us, products that seem inferior but which are "good enough" then begin to disrupt state-of-the art offerings. This was what happened to the voice minute market over the last 20 years. Voice-over-IP, which initially was just "good enough," made voice into a commodity. Competition played a big part, though Moore's law was the chief driver of falling prices. Now that voice is an inexpensive afterthought (though still not good enough on many mobile links) and data is king, we see the need for more integration to meet the new challenges of the multimedia exaflood. It's a never ending, dynamic cycle.

The merger will have its critics, but it seriously accelerates the coming of fourth generation mobile networks and the spread of broadband across America.

Original article: http://blogs.forbes.com/bretswanson/2011/03/22/atts-exaflood-acquisition-good-for-mobile-consumers-internet-growth/